

What is Claimed Is:

1. A protection system for a load center and electrical panel board having lead bus bars comprising:

a temperature reactive material attached to the panel board bus bars, a control module that monitors the temperature of the temperature reactive material, and a shunt trip connected to a circuit breaker, where, when the temperature of the bus bars exceeds a predetermined temperature, the control module commands the shunt trip to cause the circuit breaker to shut off the circuit so that the system reacts to a temperature overload rather than a current overload.

2. The system of Claim 1, where the temperature reactive material is a resistance temperature detector adhesive strip contacting the bus bars at least near the circuit breaker, and comprises a conductive material contacting a supporting adhesive substrate.

3. A thermal detection system comprising a plural pole circuit breaker, lead bus bars, and a resistance temperature detector adhesive tape connected to the bus bars and to an electronic circuit that detects the resistance change in the resistance temperature detector adhesive tape, which in turn sends a signal to a shunt trip connected to the circuit breaker.

4. The thermal detection system of Claim 3, where a heat detection measurement is electrically connected to the resistance temperature detector adhesive tape and through a shunt trip module to the circuit breaker.

5. The thermal detection system of Claim 3, where bus bars connect to the circuit breaker and the resistance temperature detector adhesive tape contacts the bus bars at least along part of the bus bars length.

6. The thermal detection system of Claim 3, where bus bars connect to the circuit breaker and the resistance temperature detector adhesive tape contacts the bus bars at least near the circuit breaker.

7. The thermal detection system of Claim 3, where the adhesive tape strip comprises conductive material contacting a supporting adhesive substrate.

8. A thermal detection system comprising at least two uninsulated, metal, power supply bus bars having a predetermined current limit connected to a plural pole circuit breaker which contains a shunt trip module, where

each bus bar is contacted along at least part of its length with a resistance temperature detector adhesive tape strip that reacts to changes in temperature by changing its resistivity and where a heat detection measurement module is electrically connected to each resistance temperature detector adhesive tape strip, and to the shunt trip module, where the heat detection module is preset to allow current to energize the shunt trip module and shut down the circuit breaker if the temperature anywhere along the bus bar adhesive tape strip contact points is measured by the heat detection measurement module to be greater than the current limit preset.

9. The thermal detection system of Claim 8, where the adhesive tape strip contacts the bus bars near the circuit breaker.

10. The thermal detection system of Claim 8, where the adhesive tape strip comprises conductive material contacting a supporting adhesive substrate.

11. The thermal detection system of Claim 8, where the heat detection measurement module is an electrical bridge circuit that comprises three open resistors and a variable resistor preset switch, with an associated voltage source.

12. The thermal detection system of Claim 8, where the shunt trip module comprises an electromechanical device attached to the circuit breaker where a shunt trip coil energized by the thermal detection system energizes a tripping mechanism within the main circuit breaker.